PATENT SPECIFICATION

NO DRAWINGS

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COMPLETE SPECIFICATION

Process for Preparing Glucosamine Salts

We, ROTTA RESEARCH LABORATORIUM, an Italian Joint Stock Company, of San Fruttuoso di Monza, Milan, Italy, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a process for preparing glucosamine salts.

The invention provides a process for preparing glucosamine sulphate, phosphate or hydriodide, comprising placing glucosamine hydrochloride solution in contact with an anionic resin previously conditioned with sulphuric, phosphoric or hydriodic acid or a metal salt of one of these acids.

Further details of the method will appear from the following Examples.

EXAMPLE I.

An anionic resin is conditioned in a column by means of a normal aqueous solution (1 N) of Na_2SO_4 at a rate of about 500 ml/hour. After washing the resin with distilled water, 1,400 ml of a 0.3 N glucosamine hydrochloride solution are led through the column at a rate of about 300 ml/hour.

The effluent solution from the column is collected and concentrated in vacuum at 45°—52° C to a volume of 200 ml, and is mixed with 200 ml acetone, whereupon the mixture is brought to dryness. The result is a crystalline product which is washed with ethyl alcohol. About 90 gr white or slightly yellow-tinged crystals are obtained, which melt at 115°—122° C, with decomposition at 127° C. Centesimal analysis discloses that the product is glucosamine sulphate.

EXAMPLE II

The same procedure as described in Example I is followed; however, the resin is conditioned by means of a normal NaI solution.

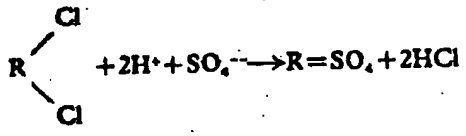
Thie yields 110 gr white or slightly yellow-tinged crystals melting at 188—190° C. The product in this case is glucosamine hydriodide.

EXAMPLE III

The same procedure as described in Example I is followed; however, the resin is conditioned by means of an Na_2HPO_4 solution.

The result is a crystalline white highly water-soluble product melting at 195° C; centesimal analysis discloses that the product is glucosamine phosphate.

By way of example, in order to obtain glucosamine sulphate an anionic resin is employed which may be represented by the formula $R.Cl_2$, conditioned with an aqueous solution of sulphate ions (sulphuric acid) in accordance with the following reaction:



$$R\begin{matrix}Cl\\ \diagup\\ \diagdown\\ Cl\end{matrix} + 2H^+ + SO_4^{--} \longrightarrow R{=}SO_4 + 2HCl$$

After washing the resin with distilled water, an exchange contact with a solution of glucosamine hydrochloride is carried out, giving rise to the following reaction:

$$R{=}SO_4 + 2\ C_6H_{11}O_5NH_2\ .\ HCl \longrightarrow (C_6H_{11}O_5NH_2)_2\ .\ H_2SO_4 + R.Cl_2.$$

WHAT WE CLAIM IS:—

1. A process for preparing glucosamine sulphate, phosphate or hydriodide, comprising placing glucosamine hydrochloride solution in contact with an anionic resin previously conditioned with sulphuric, phosphoric or hydriodic acid or a melt salt of one of these acids.

[Price 4s. 6d.]

AEE

2. A process as claimed in claim 1, substantially as hereinbefore described in Example I, II or III.

3. Glucosamine sulphate, phosphate or hydriodide when prepared by a process as claimed in claim 1 or claim 2.

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